

Submitted by Cindy Cooke

MAMMAL SPECIES OF THE WORLD

*A Taxonomic and
Geographic Reference*

THIRD EDITION
Volume 1

*Edited by Don E. Wilson
and DeeAnn M. Reeder*

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In memory of
Peter Cannell, Charles O. Handley, Jr., and Karl F. Koopman

ORDER CARNIVORA

by W. Christopher Wozencraft

ORDER CARNIVORA Bowdich, 1821.

COMMENTS: Higher taxonomic arrangement follows that of McKenna and Bell (1997), except that Alluriidae, Eupleridae, Mephitidae, and Odobenidae are raised to Family rank.

SUBORDER FELIFORMIA Kretzoi, 1945.

Family Felidae Fischer de Waldheim, 1817. *Mém. Soc. Imp. Nat. Moscow*, 5:372.

SYNONYMS: *Eualuroidea* Kretzoi, 1929; *Felinoicea* Brunet, 1979; *Feloidae* Hay, 1930; *Feloidea* Simpson, 1931; *Lynicina* Gray, 1867.

COMMENTS: Revised by Pocock (1917a, b, 1951), Weigel (1961), de Beaumont (1964), Hemmer (1978), Král and Zima (1980), Kratochvíl (1982c), Groves (1982a), Collier and O'Brien (1985), Salles (1992), Johnson and O'Brien (1997), McKenna and Bell (1997), Bininda-Emonds et al. (1999), and Mattern and McLennan (2000). Some (Honacki et al., 1982; McKenna and Bell, 1997; Van Gelder, 1977b) have followed Simpson (1945) and placed the majority of taxa in *Felis*, except for the large cats (i.e., *Panthera* and *Acinonyx*); however, this is not well supported by primary systematic studies and only poorly represents relationships below the family level. Most studies agree on the clear separation of the "big cats" (i.e., *Panthera*, *Neofelis*, *Uncia*) from the remainder. However, within the remaining group, there does not appear to be clear consensus. Even the cheetah's (*Acinonyx*) traditional position has been called into question (Bininda-Emonds et al., 1999; Mattern and McLennan, 2000). For these reasons, only two subfamilies of cats are recognized, and taxa are listed alphabetically within each subfamily. Synonyms allocated according to McKenna and Bell (1997) and Kitchener (pers. comm.). Species distributions were supplemented by Kristin Nowell, IUCN/SSC Cat Specialist Group (pers. comm.). For an excellent review of the biology of the felids, see Sunquist and Sunquist (2002).

Subfamily Felinae Fischer de Waldheim, 1817. *Mém. Soc. Imp. Nat. Moscow*, 5:372.

SYNONYMS: *Acinonychia* Pocock, 1917; *Guepardina* Gray, 1867; *Lyninci* Kalandadze and Rautian, 1992; *Profelina* Kalandadze and Rautian, 1992; *Therallurini* Kalandadze and Rautian, 1992.

COMMENTS: A comparison of four recent phylogenetic analyses of the non-pantherine cats shows little consensus at branch points other than those that might be recognized as genera. For this reason all non-pantherine cats are tentatively grouped together in the Felinae. Synonyms allocated according to McKenna and Bell (1997).

Acinonyx Brookes, 1828. *Cat. Anat. Zool. Mus. Joshua Brookes, London*, p. 16, 33.

TYPE SPECIES: *Acinonyx venator* Brookes, 1828 (= *Felis jubata* Schreber, 1775), by monotypy (International Commission on Zoological Nomenclature, 1956a; Melville and Smith, 1987).

SYNONYMS: *Acinomyx* de Beaumont, 1964; *Cynaelurus* Gloger, 1841; *Cynailurus* Wagner, 1830; *Cynofelis* Lesson, 1842; *Guepar* Boltard, 1842; *Guepardo* Gray, 1843; *Guepardus* Duvernoy, 1834; *Paracinonyx* Kretzoi, 1929.

COMMENTS: Wozencraft (1993) placed *Acinonyx* in the monophyletic subfamily Acinonychinae. Salles (1992), Johnson and O'Brien (1997), Bininda-Emonds et al. (1999), and Mattern and McLennan (2000) considered *Acinonyx*, *Puma concolor*, and *Puma* (= *Herpailurus*) *yagouaroundi* to represent close sister groups. Synonyms allocated according to McKenna and Bell (1997).

Acinonyx jubatus (Schreber, 1775). *Die Säugetiere*, 2(15):pl. 105 [1775]; text 3(22):392 [1777].

COMMON NAME: Cheetah.

TYPE LOCALITY: "südliche Afrika; man bekommt die Felle vom Vorgebirge der guten Hoffnung" [South Africa, Western Cape Province, Cape of Good Hope].

DISTRIBUTION: Algeria, Angola, Benin, Botswana, Burkina Faso, Cameroon, Central African

Israel, Kenya, Libya, Mali, Morocco, Nepal, Nigeria, Pakistan, Saudi Arabia, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Turkmenistan, Uzbekistan, Yemen.

STATUS: U.S. ESA and IUCN - Data Deficient as *H. hyaena barbara*, otherwise Lower Risk (nt).

SYNONYMS: *antiquorum* (Temminck, 1820); *barbara* de Blainville, 1844; *bergeri* Matschie, 1910; *bilkiewiczi* Satunin, 1905; *hokcharensis* Saturin, 1905; *dubia* Schinz, 1821; *fasciata* Thunberg, 1820; *hieronimela* Matschie, 1900; *hyaenomelas* (Bruce, in Desmarest, 1820); *indica* de Blainville, 1844; *orientalis* Tiedemann, 1808; *rendalli* Lönnberg, 1912; *saturnini* Matschie, 1910; *schillingsi* Matschie, 1900; *striata* Zimmermann, 1777; *suilla* Filippi, 1853; *sultana* Pocock, 1934; *syriaca* Matschie, 1900; *virgata* Ogilby, 1840; *vulgaris* Desmarest, 1820; *zarudnyi* Satunin, 1905.

COMMENTS: Reviewed by Rieger (1981) and Jenks and Werdelin (1998). Pocock (1934) and Jenks and Werdelin (1998) argued that at present neither morphological nor molecular studies have supported the recognition of subspecies. Synonyms according to Rieger (1981) and Jenks and Werdelin (1998).

Proteles I. Geoffroy Saint-Hilaire, 1824. Bull. Sci. Soc. Philom. Paris, 1824:139.

TYPE SPECIES: *Proteles islandii* I. Geoffroy Saint-Hilaire, 1824 (= *Viverra cristata* Sparrman, 1783), by original designation (Melville and Smith, 1987).

SYNONYMS: *Geocyon* Wagler, 1830.

Proteles cristata (Sparrman, 1783). Resa Goda-Hopps-Udden., I:581.

COMMON NAME: Aardwolf.

TYPE LOCALITY: English translation (Sparrman, 1786) of original locality: "Agter-Bruntjes hoogte . . . which takes in the upper part of Kleine Visch-rivier, and is separated from Camdebo by Bruntjes hoogte . . ."; listed in G. M. Allen (1939) as "Near Little Fish River, Somerset East, Cape Colony" [South Africa].

DISTRIBUTION: Angola, Botswana, Central African Republic, Egypt, Ethiopia, Kenya, Mozambique, Namibia, Somalia, South Africa, Sudan, Tanzania, Uganda, Zambia, Zimbabwe.

STATUS: CITES - Appendix III (Botswana); IUCN - Lower Risk (lc).

SYNONYMS: *canescens* Shortridge and Carter, 1938; *harrisoni* Rothschild, 1902; *hyenoides* (Desmarest, 1821); *isalandii* I. Geoffroy Saint-Hilaire, 1824; *pallidior* Cabrera, 1910; *septentrionalis* Rothschild, 1902; *temnes* Heller, 1913; *transvaalensis* Roberts, 1932; *typicus* A. Smith, 1834.

COMMENTS: Reviewed by Koehler and Richardson (1990) and Jenks and Werdelin (1998) who demonstrated that subspecies are not well defined and probably should not be recognized. Synonyms according to Jenks and Werdelin (1998).

SUBORDER CANIFORMIA Kretzoi, 1938.

Family Canidae Fischer, 1817. Mém. Soc. Imp. Nat. Moscow, 5:372.

COMMENTS: Conservation status and distribution reviewed by Ginsberg and Macdonald (1990).

Reviewed by Langguth (1975), Stains (1975), Tedford et al. (1995), and Wayne et al. (1997). Revisions by Langguth (1969), Clutton-Brock et al. (1976), Van Geider (1978), Berta (1985, 1988), Wayne and O'Brien (1987), Wayne (1993), and Wayne et al. (1987a, b, 1989, 1997) gave little support to the subfamilies recognized by Simpson (1945); therefore, no subfamilies are recognized here. There are considerable questions regarding the validity of the South American genera (Xiaoming Wang et al., 1999; Wayne et al., 1997). Van Gelder's (1978) hybridization criteria for generic classification resulted in the recognition of only a few genera, including some paraphyletic groups.

Atelocynus Cabrera, 1940. Notas Mus. La Plata, 5:14.

TYPE SPECIES: *Canis microtis* Scaler, 1883, by original designation.

SYNONYMS: *Canis* Scaler, 1883 (preoccupied by *Canis* Linneaus, 1758); *Circinocyon* J. A. Allen, 1905.

COMMENTS: See comments under *Dusicyon*. Placed in *Atelocynus* by Cabrera (1931, 1957), Langguth (1975), Stains (1975), Berta (1985, 1986, 1988) and McKenna and Bell (1997).

Van Gelder (1978) considered *Atelocynus* a subgenus of *Canis*. Tedford et al. (1995) placed it as the sister taxon to *Speothos*.

Atelocynus microtis (Sclater, 1883). Proc. Zool. Soc. Lond., 1882:631 [1883].

COMMON NAME: Short-eared Dog.

TYPE LOCALITY: "Amazons," restricted by Hershkovitz (1957a) to "south bank of the Rio Amazonas, Pará, Brazil."

DISTRIBUTION: Amazonian basin: Bolivia (see Anderson, 1997), Brazil, Colombia, Ecuador, Peru, Venezuela (?).

STATUS: IUCN – Data Deficient.

SYNONYMS: *sclateri* J. A. Allen, 1905.

COMMENTS: Reviewed by Hershkovitz (1961a) and Berta (1986).

Canis Linnaeus, 1758. Syst. Nat., 10th ed., 1:38.

TYPE SPECIES: *Canis familiaris* Linnaeus, 1758 (= *Canis lupus* Linnaeus, 1758), by Linnean tautonomy (Melville and Smith, 1987).

SYNONYMS: *Alopodon* Hilzheimer, 1906; *Alopis* Rafinesque, 1815; *Chaon* C. E. H. Smith, 1839; *Dasycyon* Krumbiegel, 1953; *Disko* Bray, 1869; *Lupulella* Hilzheimer, 1906; *Lupulus* Gervais, 1855; *Lupus* Oken, 1816; *Lyciscus* C. E. H. Smith, 1839; *Mamcanisus* Herrera, 1899; *Neocyon* Gray, 1868; *Oreocyon* Krumbiegel, 1949; *Oxygous* Hodgson, 1841; *Sacculus* C. E. H. Smith, 1839; *Schaeffia* Hilzheimer, 1906; *Stenaria* Gray, 1868; *Thos* Oken, 1816; *Vulpicantis* de Blainville, 1837.

COMMENTS: Van Gelder (1978) included *Alopex*, *Atelocynus*, *Ceradocyon*, *Pseudalopex*, *Lycalopex*, *Dusicyon*, and *Vulpes* as subgenera, however, this arrangement is not currently employed by most mammalogists (Berta, 1987, 1988; Corbet, 1978; Corbet and Hill, 1980; Groenov and Baranova, 1981; Hall, 1981; McKenna and Bell, 1997; Wozencraft, 1989). Synonyms allocated according to McKenna and Bell (1997).

Canis adustus Sundevall, 1847. Ofv. K. Svenska Vet.-Akad. Forhandl., Stockholm, 3:121.

COMMON NAME: Side-striped Jackal.

TYPE LOCALITY: "Caffaria Interiore"; listed as "Magaliesberg" [South Africa] by Sclater (1900).

DISTRIBUTION: Angola, Botswana, Cameroon, Central African Republic, Dem. Rep. Congo, Ethiopia, Gabon, Kenya, Malawi, Mozambique, Namibia, Niger, Nigeria, Republic of Congo, Senegal, South Africa, Sudan, Tanzania, Uganda, Zambia, Zimbabwe,

STATUS: IUCN – Lower Risk (lc).

SYNONYMS: *holubi* Lorenz, 1895; *wunderlichii* Noack, 1897; *irwacha* Heller, 1914; *centralis* Schwarz, 1915; *grayi* Hilzheimer, 1906; *kaffensis* Neumann, 1902; *lateralis* P. L. Sclater, 1870; *notatus* Heller, 1914.

COMMENTS: Synonyms allocated according to G. M. Allen (1939) and Ellerman et al. (1953).

Canis aureus Linnaeus, 1758. Syst. Nat., 10th ed., 1:40.

COMMON NAME: Golden Jackal.

TYPE LOCALITY: "orientis", restricted by Thomas (1911a) to "Benná Mts., Laristan, S. Persia" [Iran].

DISTRIBUTION: Afghanistan, Albania, Algeria, Bangladesh, Burma, Chad, Coatia, Egypt, Eritrea, Ethiopia, Greece, Iran, Iraq, Israel, Italy, Jordan, Kenya, Lebanon, Libya, Macedonia, Mali, Mauritania, Morocco, Niger, Nigeria, Oman, Pakistan, Saudi Arabia, Senegal, Slovenia, Somalia, Sri Lanka, Sudan, Syria, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Western Sahara, Yemen.

STATUS: CITES – Appendix III (India); IUCN – Lower Risk (lc).

SYNONYMS: *balkanicus* Brusina, 1892; *caucasica* Kolenati, 1858; *dalmatinus* Wagner, 1841; *hadramauticus* Noack, 1896; *hungaricus* Ehik, 1938; *kola* Wroughton, 1916; *lanka* Wroughton, 1916; *maroccana* (Cabrera, 1921); *typicus* Kolenati, 1858; *vulgaris* Wagner, 1841; *algirensis* Wagner, 1841; *barbarus* (C. E. H. Smith, 1839) [preoccupied]; *grayi* Hilzheimer, 1906; *tripolitanus* Wagner, 1841; *anthus* F. Cuvier, 1820; *senegalensis* (C. E. H. Smith, 1839); *bea* Heller, 1914; *crucesmanni* Matschie, 1900; *ecsedensis* (Kretzoi, 1947); *minor* Mojsisovics, 1897 [preoccupied]; *indicus* Hodgson, 1833;

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lupaster Hemprich and Ehrenberg, 1833; *sacer* Hemprich and Ehrenberg, 1833; *moreoticus* L. Geoffroy Saint-Hilaire, 1835; *graculus* Wagner, 1841; *maria* Wroughton, 1916; *rufipartitus* Hemprich and Ehrenberg, 1832; *hagenbecki* Noack, 1897; *mengesi* Noack, 1897; *somalicus* Lorenz, 1906; *soudanicus* Thomas, 1903; *doederleini* Hilzheimer, 1906; *nubianus* (Cabrera, 1921); *thoooides* Hilzheimer, 1906; *variegatus* Cretzschmar, 1826 [preoccupied]; *syriacus* Hemprich and Ehrenberg, 1833.

COMMENTS: Synonyms allocated according to G. M. Allen (1939) and Ellerman and Morrison-Scott (1951).

Canis latrans Say, 1823. In James, Account Exped. Pittsburgh to Rocky Mts, 1:168.

COMMON NAME: Coyote.

TYPE LOCALITY: "Engineer cantonment" reported at "latitude 41°25'N, and longitude ... 95°47'30'W" (p. XVIII, vol. 2). Reported in Honacki et al. (1982) as "U.S.A., Nebraska, Washington Co., Engineer Cantonment, about 12 mi. (19.2 km) S. E. Blair".

DISTRIBUTION: Canada, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, USA. Introduced to Florida and Georgia and currently widespread throughout Northern and Central America (Beckoff, 1977, 1999).

STATUS: IUCN - Lower Risk (lc).

SYNONYMS: *nebrascensis* Merriam, 1898; *pallidus* Merriam, 1897; *cagottis* C. E. H. Smith, 1839; *clepticus* Elliot, 1903; *dickeyi* Nelson, 1932; *frustror* Woodhouse, 1851; *goldmani* Merriam, 1904; *hondurensis* Goldman, 1936; *impavidus* J. A. Allen, 1903; *Incolutus* Hall, 1934; *jamesi* Townsend, 1912; *lestes* Merriam, 1897; *mearnsi* Merriam, 1897; *estor* Merriam, 1897; *microdon* Merriam, 1897; *ochropus* Eschscholtz, 1829; *peninsulae* Merriam, 1897; *texensis* Bailey, 1905; *thamnos* Jackson, 1949; *umpquensis* Jackson, 1949; *vigilis* Merriam, 1897.

COMMENTS: Revised by Young (1951) and reviewed by Beckoff (1977). Synonyms allocated according to Beckoff (1977) and Hall (1981).

Canis lupus Linnaeus, 1758. Syst. Nat., 10th ed., 1:39.

COMMON NAME: Wolf.

TYPE LOCALITY: "Europae sylvis, etiam frigidioribus", restricted by Thomas (1911a) to "Sweden".

DISTRIBUTION: Throughout the N hemisphere: North America south to 20°N in Oaxaca (Mexico); Europe; Asia, including the Arabian Peninsula and Japan, excluding Indochina and S India. Extirpated from most of the continental USA, Europe, and SE China and Indochina (Ginsburg and Macdonald, 1990). Afghanistan, Albania, Armenia, Azerbaijan, Belarus, Bhutan, Bulgaria, Canada, China, Egypt (?), Estonia, Finland, France, Georgia, Greece, Greenland, Hungary, India, Iran, Iraq, Israel, Jordan, Kyrgyzstan, Latvia, Lebanon (?), Lithuania, Macedonia, Mexico, Mongolia, Nepal, Norway, Pakistan, Poland, Portugal, Romania, Russia, Saudi Arabia, Serbia and Montenegro, Slovakia, Spain, Sweden, Syria, Tajikistan, Turkey, Turkmenistan, Ukraine, USA (see status below), Uzbekistan.

STATUS: CITES - Appendix I (Indian, Pakistan, Bhutan, and Nepal populations); otherwise Appendix II. U.S. ESA - as *C. lupus* varies by population: 1) Endangered in Southwestern Distinct Population Segment - Mexico and USA (AZ, NM, CO south of Interstate Highway 70, UT south of U.S. Highway 50, OK and TX, except those parts of OK and TX east of Interstate Highway 35; except where listed as an experimental population); 2) Threatened in Western Distinct Population Segment - USA (CA, ID, MT, NV, OR, WA, WY, UT north of U.S. Highway 50, and CO north of Interstate Highway 70, except where listed as an experimental population); 3) Threatened in Eastern Distinct Population Segment - USA (CT, IA, IL, IN, KS, MA, ME, MI, MN, MO, ND, NE, NH, NJ, NY, OH, PA, RI, SD, VT, and WI); 4) Experimental populations in portions of USA (WY and portions of ID and MT; portions of AZ, NM, and TX); otherwise, U.S. ESA - Delisted Taxa in USA (Delaware, West Virginia, Virginia, Maryland, District of Columbia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, parts of Oklahoma and Texas east of Interstate Highway 35; delisting of all other lower 48 states or portions of lower 48 states not otherwise included in the 3 distinct population segments). U.S. ESA - as *C. rufus* Endangered in cen-

tire range except in portions of NC and TN (USA), where listed as experimental populations. IUCN – Lower Risk (lc), except for Mexican subpopulation, which is Extinct in the Wild, Italian subpopulation, which is Vulnerable, Spanish-Portuguese subpopulation, which is Lower Risk (cd), and as *Canis rufus*, which is Critically Endangered.

SYNONYMS: *altaicus* (Noack, 1911); *argunensis* Dybowski, 1922; *canus* de Sélys Longchamps, 1839; *communis* Dwigubski, 1804; *deitanus* Cabrera, 1907; *desertorum* Bogdanov, 1882; *flavus* Kerr, 1792; *fulvus* de Sélys Longchamps, 1839; *italicus* Altobello, 1921; *kurjak* Bolkay, 1925; *lycaon* Trouessart, 1910; *major* Ogérien, 1863; *minor* Ogerien, 1863; *niger* Hermann, 1804; *orientalis* (Wagner, 1841); *orientalis* Dybowski, 1922; *signatus* Cabrera, 1907; *albus* Kerr, 1792; *dybowskii* Domaniewski, 1926; *kamtschaticus* Dybowski, 1922; *turuchanensis* Ognev, 1923; *alces* Goldman, 1941; *arabs* Pocock, 1934; *arctos* Pocock, 1935; *baileyi* Nelson and Goldman, 1929; *beothucus* G. M. Allen and Barbour, 1937; *bernardi* Anderson, 1943; *barksianus* Anderson, 1943; *cumpestris* Dwigubski, 1804; *bactrianus* Laptev, 1929; *cubanensis* Ognev, 1923; *desertorum* Bogdanov, 1882; *chanco* Gray, 1863; *cervinus* Abe, 1923; *doregostiskii* Skalon, 1936; *karanorensis* (Matschie, 1907); (preoccupied); *niger* Slater, 1874; *tschillensis* (Matschie, 1907); *columbianus* Goldman, 1941; *crassodon* Hall, 1932; *dingo* Meyer, 1793 [domestic dog]; *antarcticus* Kerr, 1792 [suppressed, ICZN, O. 451]; *australasiae* Desmarest, 1820; *australis* Grav. Voigt, 1831; *papuensis* Kamtsay, 1879; *terridgeana* Konibrogge, 1896; *hailstromi* Troughton, 1957; *harappensis* Prashad, 1936; *familiaris* Linnaeus, 1758 [domestic dog]; *aegyptius* Linnaeus, 1758; *alco* C. E. H. Smith, 1839; *americanus* Gmelin, 1792; *anglicus* Gmelin, 1792; *antarcticus* Gmelin, 1792; *aprinus* Gmelin, 1792; *aquaticus* Linnaeus, 1758; *aquatilis* Gmelin, 1792; *avicularis* Gmelin, 1792; *borealis* C. E. H. Smith, 1839; *brevipilis* Gmelin, 1792; *cursorius* Gmelin, 1792; *domesticus* Linnaeus, 1758; *extrarius* Gmelin, 1792; *ferus* C. E. H. Smith, 1839; *fricator* Gmelin, 1792; *fricatrix* Linnaeus, 1758; *fullus* Gmelin, 1792; *gallicus* Gmelin, 1792; *glaucus* C. E. H. Smith, 1839; *grajus* Linnaeus, 1758; *grajus* Gmelin, 1792; *hagenbecki* Krumbiegel, 1950; *hainichicus* Linné, 1758; *leucurus* Gmelin, 1792; *hyacinthus* Gmelin, 1792; *islandicus* Gmelin, 1792; *italicus* Gmelin, 1792; *lanarius* Gmelin, 1792; *leontinus* Gmelin, 1792; *leporarius* C. E. H. Smith, 1839; *major* Gmelin, 1792; *major* Gmelin, 1792; *mastinus* Linnaeus, 1758; *melitacus* Gmelin, 1792; *melitacus* Linnaeus, 1758; *minor* Gmelin, 1792; *molossus* Gmelin, 1792; *mustelinus* Linnaeus, 1758; *obesus* Gmelin, 1792; *orientalis* Gmelin, 1792; *pacificus* C. E. H. Smith, 1839; *plancus* Gmelin, 1792; *pomeranus* Gmelin, 1792; *sagaces* C. E. H. Smith, 1839; *sanguinarius* C. E. H. Smith, 1839; *saxatus* Linnaeus, 1758; *scoticus* Gmelin, 1792; *sibiricus* Gmelin, 1792; *sulcatus* C. E. H. Smith, 1839; *terraenovae* C. E. H. Smith, 1839; *terrarius* C. E. H. Smith, 1839; *turcicus* Gmelin, 1792; *uncani* C. E. H. Smith, 1839; *variegatus* Gmelin, 1792; *venaticus* Gmelin, 1792; *vertagus* Gmelin, 1792; *filchneri* (Matschie, 1907); *laniger* (Hodgson, 1847); *floridanus* Miller, 1912; *fuscus* Richardson, 1839; *gigas* (Townsend, 1850); *gregoryi* Goldman, 1937; *griseoalbus* Baird, 1858; *knighti* Anderson, 1945; *hattai* Kishida, 1931; *rex* Pocock, 1935; *hodophilax* Temminck, 1839; *hodopylax* Temminck, 1844; *japonicus* Nehring, 1885; *hudsonicus* Goldman, 1941; *irremotus* Goldman, 1937; *labradorius* Goldman, 1937; *ligoni* Goldman, 1937; *lycaon* Schreber, 1775; *canadensis* de Blainville, 1843; *ungavensis* Comeau, 1940; *mackenzii* Anderson, 1943; *manningi* Anderson, 1943; *mogollonensis* Goldman, 1937; *monstrabilis* Goldman, 1937; *niger* Bartram, 1791; *nubilus* Say, 1823; *variabilis* Wied-Neuwied, 1841; *occidentalis* Richardson, 1829; *ater* Richardson, 1829; *sticta* Richardson, 1829; *orion* Pocock, 1935; *pallipes* Sykes, 1831; *pambasileus* Elliot, 1905; *rufus* Audubon and Bachman, 1851; *tundrarum* Miller, 1912; *youngi* Goldman, 1937.

COMMENTS: Reviewed by Mech, 1974. Opinion 2027 of the International Commission on Zoological Nomenclature (March, 2003a) ruled that *lupus* is not invalid by virtue of being pre-dated by a name based on a domestic form. Includes the domestic dog as a subspecies, with the dingo provisionally separate—artificial variants created by domestication and selective breeding (Vilá et al., 1999; Wayne and Ostrander, 1999;

Savolainen et al., 2002). Although this may stretch the subspecies concept, it retains the correct allocation of synonyms. Corbet and Hill (1992) suggested treating the domestic dog as a separate species in SE Asia. Synonyms allocated according to Ellerman and Morrison-Scott (1951), Mech (1974), and Hall (1981). Provisionally includes *rufus* (recognized by Paradiso, 1968; Paradiso and Nowak, 1972; Atkins and Dillon, 1971; Paradiso and Nowak, 1972; Nowak, 1979, 1992, 2002) although this problematic group (*rufus*, *floridanus*, *gregoryi*) should probably be best listed as *incertae sedis*. The widely used name *C. niger* is invalid (International Commission on Zoological Nomenclature, 1957a). The validity of *rufus* as a full species was questioned by Clutton-Brock et al. (1976), and Lawrence and Bossert (1967, 1975), due to the existence of natural hybrids with *lupus* and *latrans*. Natural hybridization may be a consequence of habitat disruption by man (Paradiso and Nowak, 1972, 2002). All specimens examined by Wayne and Jenks (1991) had either a *lupus* or *latrans* mtDNA genotype and there appears to be a growing consensus that all historical specimens are a product of hybridization (Nowak, 2002; Reich et al., 1999; Roy et al., 1994, 1996; Wayne et al., 1992, 1998). Hybridization between wolf and coyote has long been recognized (Nowak, 2002). Two recent studies make the strongest case for separation. Wilson et al. (2000) argued for separation of the Eastern Canadian Wolf (as *Canis lycaon*) and the Red Wolf (as *Canis rufus*) as separate species based on mtDNA, but see Nowak (2002) who could not find support for this in a morphometric study. Nowak (2002) in an extensive analysis of tooth morphology concluded that there was a distinct population intermediate between traditionally recognized wolves and coyotes, which warranted full species recognition (*C. rufus*). The red wolf is here considered a hybrid after Wayne and Jenks (1991), Wayne (1992, 1995), and Wayne et al. (1992). Although hybrids are not normally recognized as subspecies, I have chosen as a compromise to retain *rufus* because of its uncertain status. Also see Roy et al. (1994, 1996), Vilá et al. (1999), and Nowak (2002) who provided an excellent review of the situation.

Canis mesomelas Schreber, 1775. Die Säugetiere, 2(14):pl. 95[1775]; text, 3(21):370[1776], 586[1777].

COMMON NAME: Black-backed Jackal.

TYPE LOCALITY: "Vorgebirge der guten Hoffnung" [South Africa, Western Cape Prov., Cape of Good Hope].

DISTRIBUTION: Allopatric south and east African populations: Angola, Botswana, Ethiopia, Kenya, Mozambique, Namibia, Somalia, Sudan, Tanzania, Uganda, Zimbabwe.

STATUS: IUCN – Lower Risk (lc).

SYNONYMS: *achrotes* (Thomas, 1925); *arenarium* (Thomas, 1926); *variegatoides* A. Smith, 1833; *schmidti* Noack, 1897; *elgonae* Heller, 1914; *mcmillani*, Heller, 1914.

COMMENTS: Reviewed by Walton and Joly (2003).

Canis simensis Rüppell, 1840. Neue Wirbelt. Fauna Abyssin. Gehörig. Säugeth., 1:39, pl. 14.

COMMON NAME: Ethiopian Wolf.

TYPE LOCALITY: "Wir beobachteten diesen wolfsartigen Hund in den Bergen von Simen . . ." [Ethiopia, mountains of Simen].

DISTRIBUTION: C Ethiopia.

STATUS: U.S.: ESA – Endangered; IUCN – Critically Endangered.

SYNONYMS: *crinensis* (Erlanger and Neumann, 1900); *simensis* Heuglin, 1862; *simensis* (Gray, 1869); *walzi* Heuglin, 1862; *citernii* de Beaux, 1922.

COMMENTS: Sometimes placed in subgenus *Simenia* Gray, 1868. Reviewed by Sillero-Zubiri and Gottelli (1994).

Cerdocyon C. F. H. Smith, 1839. Jardine's Natur. Libr., 9:259-267.

TYPE SPECIES: *Canis azarae* Wied, 1824 (= *Canis Theus* Linnaeus, 1766) by subsequent designation (Thomas, 1914a).

SYNONYMS: *Carcinocyon* J. A. Allen, 1905; *Thous* J. E. Gray, 1868.

COMMENTS: Tedford et al. (1995) considered *Cerdocyon* and *Nyctereutes* to be sister taxa.